

# **Environmental Assessment Shiawassee National Wildlife Refuge Wildlife Drive**

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## **Abstract**

The U.S. Fish and Wildlife Service is proposing construction of a Wildlife Drive at Shiawassee National Wildlife Refuge (Refuge) in Saginaw County, Michigan. This Environmental Assessment (EA) considers the biological, environmental, and socioeconomic effects that constructing the facility will have on the Refuge.

The purpose of the Wildlife Drive is to improve opportunities for the public to participate in wildlife observation activities at the Refuge.

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## **Chapter 1: Purpose and Need for the Proposed Action**

### **Purpose and Need**

The purpose of the proposed action is to improve opportunities for the public to participate in wildlife observation activities at Shiawassee National Wildlife Refuge.

The action is needed because adequate public access for this activity does not exist at the Refuge. Currently, primary public access is restricted to four foot trails near the periphery of the Refuge. Consequently, the public is restricted in its ability to view the wildlife spectacle that makes the Refuge unique. An auto tour is by far the most requested improvement to visitor programs and facilities made by the public. The action is also consistent with the legislative mandates of the National Wildlife System Improvement Act of 1997, which identifies wildlife observation as a use to be facilitated on national wildlife refuges.

We prepared this EA using guidelines of the National Environmental Policy Act of 1969. The Act requires us to examine the effects of proposed actions on the natural and human environment. In the following sections we describe three alternatives for Wildlife Drive development, the environmental consequences of each alternative, and our preferred management direction. We designed each alternative as reasonable approaches, and then we identified our preferred alternative based on the environmental consequences and ability to achieve the Refuge's purpose.

### **Background**

The Refuge was established in 1953 and includes 9,620 acres. The Refuge is located within Saginaw County, Michigan and is surrounded by both urban and agricultural areas. The Refuge manages a variety of habitats that provide resting, foraging, and nesting opportunities for 280 species of resident and migratory birds. The major habitat types include emergent wetlands (3,771 acres), forests (4,225 acres), agricultural lands (1,180 acres), and grasslands (580 acres). This diversity of habitats also supports an abundance of plant, mammal, reptile, amphibian, and fish species.

The management techniques currently used on the Refuge include control of water levels in moist soil units and pools, biological and chemical control of invasive plant species, prescribed burning, mowing, and hunting of white-tailed deer and Canada geese.

In 1997, the U.S. Fish and Wildlife Service began preparing a Comprehensive Conservation Plan (CCP) for the Refuge. The CCP outlines the management of wildlife habitat and development of public use facilities and programs at the Refuge for the next 15 years. The plan provides a comprehensive framework for future management and identifies management strategies as well as locations and priorities for habitat and public use development. The CCP was finalized and approved in 2001. One of the strategies to improve wildlife observation opportunities in the CCP is the development of an auto tour route or Wildlife Drive.

### **Decision Framework**

The Regional Director for the Midwest Region of the U. S. Fish and Wildlife Service will use the EA to select one of three alternatives and determine whether the alternative selected will have significant environmental impacts requiring preparation of an environmental impact statement. Specifically, analysis and findings described in this EA will help the Regional Director decide whether to continue with existing facilities at the Refuge (no action) or to adopt another approach to management.

### **Authority, Legal Compliance, and Compatibility**

The National Wildlife Refuge System includes federal lands managed primarily to provide habitat for a diversity of wildlife species. National wildlife refuges are established under many different authorities and funding sources for a variety of purposes. The purpose(s) for which a particular refuge is established are specified in the authorizing document for that refuge. These purposes guide the establishment, design, and management of Shiawassee Refuge. The Refuge was established under the Migratory Bird Conservation Act and the Refuge Recreation Act "for use as an inviolate

sanctuary, or any other management purpose, for migratory birds” and “for (1) incidental fish and wildlife oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered or threatened species.”

Additional authority delegated by Congress, federal regulations/guidelines, executive orders and several management plans guide the operation and the management of the Refuge and provide the framework for the Fish and Wildlife Service’s proposed action. The key legislation and orders that guide the Refuge are summarized in Appendix F of the CCP.

## **Issues and Concerns**

### Public Use

Participants in CCP open house events and focus group meetings expressed a wide range of philosophies on public use of the Refuge. Some people would like to see management of the Refuge focus on wildlife and habitat with no increase of public access and public use of the Refuge. Other people would like to see an expanded trail system and enhanced access for activities such as horseback riding, environmental education, hiking, hunting, fishing, boating, and bicycling. Currently, the most requested new or expanded opportunity to use the Refuge by the public is an auto tour route.

### Resource Protection

CCP meeting participants voiced many opinions about the priority of resource protection issues. Some people said that enhanced law enforcement is a critical need for the Refuge in general. Currently, members of the public have expressed concern about law enforcement issues that the Wildlife Drive will create that jeopardize wildlife, visitors, and facilities.

### Maintenance

Dike maintenance was the primary maintenance issue that emerged from the CCP public involvement process. The need to maintain dikes was described as a top priority, particularly for dikes damaged by burrowing muskrats and, in moist soil units, wave action. Recognizing the role the Refuge plays in relieving flood pressure, people recommended conserving some areas of the Refuge as flood retention areas. The Wildlife Drive is relevant to this issue because it will incorporate existing dikes.

### Wildlife Disturbance

Wildlife disturbance is an important issue in development of the Wildlife Drive. The route will bring visitors into the core area of the Refuge where the greatest concentrations of migratory birds occur. Visitors will inevitably cause waterfowl, wading birds, shorebirds, and raptors to flee the area previously being used as foraging, nesting, or resting habitat.

To minimize this disturbance, the route will be closed during early spring when floods threats are greatest and while nesting wildlife is most sensitive to disturbance. The route will also be closed during fall and winter waterfowl season to prevent ducks and geese

from being flushed from the sanctuary of the Refuge to be killed at the adjacent Shiawassee River State Game Area. Also, visitors will be required to stay in their vehicles except at designated locations.

#### General Issues

CCP meeting participants questioned the U.S. Fish and Wildlife Service's plans to expand the Refuge, its programs, and its facilities when its ability to manage or maintain the existing Refuge is already a challenge.

## **Chapter 2: Alternatives for Management**

### **Introduction**

Three proposed management alternatives were developed during the course of planning the development of the Wildlife Drive. During the planning process, the Service identified Alternative B, 7.5-mile route, as the preferred alternative.

### **Formulations of Alternatives**

The three alternatives that were developed for this EA range from "No Action" to "Proposed Action." All of the three alternatives would serve the primary purpose for which the Refuge was established, but the end results would vary. Refuge and Service goals and objectives play an important role in the variances that would result from implementation of any one of the alternatives.

They include:

*Alternative A, No Action:* Current very limited automobile access would continue;

*Alternative B, Establish 2.5-mile Route:* Under this alternative, facilities would be improved to expand access to 2.5 miles of Refuge dikes and roads;

*Alternative C, Establish 7.5-mile Route (Preferred):* Facilities would be improved to expand access to 7.5 miles of Refuge dikes and roads

### **Descriptions of Alternatives**

#### Alternative A, No Action

The No Action alternative is a status quo alternative where current conditions and trends continue. It also serves as the baseline to compare and contrast all other alternatives.

The present level of automobile access would continue if this alternative is selected. Currently, a 7.5-mile route is opened to the public for driving access zero to two times per year. This access is typically permitted on International Migratory Bird Day (May) and the Refuge's Open House (September). Wet weather often forces cancellation of these events because current road and dike conditions will not support any substantial volume of vehicular access.

#### Alternative B, Establish 2.5-mile Route

This alternative will permit reinforcement and improvement of 2.5 miles of existing dikes and roads to yield a route that would be open for the majority of the year. Traffic will proceed in two directions along the route. The entrance and exit would be in the same location.

#### Alternative C, Establish 7.5-mile Route (Preferred)

This alternative includes reinforcement and improvement of 7.5 miles of existing dikes and roads to yield a route that would be open for the majority of the year. Traffic will proceed in one direction along the route with the entrance and exit in different locations.

### **Chapter 3: Affected Environment**

The Refuge represents an important waterfowl concentration area and crossroads for migrating geese, ducks, and other migratory birds. The Refuge is a combination of cropland, wetland, bottomland hardwood forest, and scattered grasslands. Historically, the area was forested bottomland with scattered marshes. The Refuge lies in the floodplain of the Tittabawassee, Shiawassee, Flint and Cass rivers. Flooding occurs almost every year, usually multiple times per year.

#### **Vegetation**

Water and the effects of water dominate the ecological processes on the Refuge. A variety of vegetative communities that are associated with large rivers and their floodplains are found within the authorized boundaries of the Refuge. These communities include some of the last remaining bottomland hardwood forests in Saginaw County. Another dominant community type is emergent marsh habitat. A shrub and grass habitat type is often found along the edges of the marsh community. There are also areas of open land vegetation, which includes the grasslands and croplands. The croplands are usually farmed for corn, winter wheat, soybeans or barley. The grasslands are usually abandoned farmlands that are seasonally flooded and are reverting to open field habitats.

#### **Birds**

The Refuge's array of habitats satisfies the requirements of diverse birds. More than 270 species of birds use the Shiawassee Flats area. The Tittabawassee, Shiawassee, Flint and Cass River bottoms are important stopover habitats for migrating waterfowl. Portions of the waterfowl flights from both the Mississippi and Atlantic flyways use this area each spring and fall. Two notable species that are common on the Refuge in the fall, winter, and early spring are the American black duck and Canada geese from the Southern James Bay Population. Refuge wetlands provide food, nesting, and roosting areas for more than 40 species of shore and wading birds. The bottomland forests in the Refuge are important habitats for many neo-tropical migrants and other songbirds. Refuge grasslands provide food and nesting cover for more than 100 species of passerines. The Refuge supports at least 15 species of raptors on a seasonal or permanent basis.

#### **Mammals**

More than 30 mammals have been recorded in or near the Refuge. White-tailed deer are abundant in the area because of the mix of forested lands, wetlands, shrubs, croplands, and grasslands.

### **Reptiles and Amphibians**

Surveys have recorded 20 species of reptiles and amphibians on the Refuge.

### **Threatened and Endangered Species**

No federally-listed threatened or endangered animal species regularly uses the Refuge.

### **Fish**

The Refuge's sloughs, rivers, and marshes support more than 40 species of forage and game fish. Because of the Refuge's location at the junction of all the major tributaries forming the Saginaw River and its connection with Saginaw Bay, its wetland habitats are integral for life stages to many of the fish using the bay. These habitats are critical, particularly as spawning and nursery areas. With diminishing wetland resources the Refuge has a unique role in protecting fish habitat and valuable fish resources.

### **Land Use**

The area within the authorized boundary of the Refuge totals 16,600 acres. Portions of the Refuge are adjacent to the Saginaw metropolitan area, with residential developments bordering several sections of the Refuge. Overall trends in the Saginaw area are toward continued development and movement from urban to rural areas. Agriculture lands are being altered by urban sprawl and development.

### **Contaminants**

Principal contaminants present within the authorized boundaries of the Refuge include those associated with point and nonpoint sources from industrial, municipal, and agricultural operations.

### **Cultural Resources**

The Refuge has 31 reported archeological sites on Refuge land. The land on which the Refuge is located appears to have been empty of human occupation during the late prehistoric and proto-historic periods, although hunting parties from several tribes traversed it. Thus, determining an association between prehistoric cultures that created the archeological sites and modern Indian tribes is problematic. The Refuge Manager considers potential impacts of management activities on historic properties, archeological sites, traditional cultural properties, sacred sites, human remains, and cultural materials.

### **Public Use**

Public use at the Refuge has grown steadily over the last decade. Approximately 60,000 - 70,000 Refuge visits occur each year. In 2006, hunting, fishing, and trapping accounted for 13 percent of the total visitation. Hiking, bicycling, cross country skiing, wildlife observation, photography, and environmental education accounted for 87 percent. The Refuge holds a managed goose hunt and a deer hunt. Fishing is only allowed from the shoreline in three discrete areas. The Green Point Environmental Learning Center is the

primary facility devoted to environmental education. People have complained about the use of airboats on rivers flowing through the Refuge. Airboat operators are described as having “disregard” for anglers and wildlife observers. Visitors to the Refuge have expressed a desire for more law enforcement presence to enhance visitor safety and enforce wildlife laws and regulations.

### **Pest Management**

With high densities, white-tailed deer, muskrat, beaver, raccoons, and woodchucks can severely affect habitat quality or other species. Through management, the Refuge maintains acceptable densities of these species. To reduce encroachment of invasive and pest plants, the Refuge uses several management techniques, including hand pulling individual plants, mowing, burning, water level manipulations, plowing, and chemical and biological applications. The Refuge has agreements with partner agencies to treat insect pests when outbreaks reach detrimental levels.

## **Chapter 4: Environmental Consequences**

### **Effects Common to All Alternatives**

#### Environmental Justice

Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” was signed by President Bill Clinton on February 11, 1994, to focus federal attention on the environmental and human health conditions of minority and low-income populations with the goal of achieving environmental protection for all communities. The Order directed federal agencies to develop environmental justice strategies to aid in identifying and addressing disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The Order is also intended to promote nondiscrimination in federal programs substantially affecting human health and the environment, and to provide minority and low-income communities access to public information and participation in matters relating to human health or the environment.

None of the proposed management alternatives disproportionately place an adverse environmental, economic, social, or health impacts on minority or low-income populations.

#### Cultural and Historic Resources

The Refuge has 31 reported sites on Refuge land and 42 known sites in the expansion area. Sites can include prehistoric archeological sites, historic archeological sites (Indian and Western), industrial and mining sites, farmsteads, and timbering sites. Prior to Refuge undertakings in each alternative, appropriate efforts would be made to identify known and unknown cultural resources within the area of potential effects, with avoidance of cultural resources being the preferred treatment.

#### Threatened and Endangered Species

No federally-listed endangered or threatened species regularly use the Refuge. Federally-listed species that have the potential to be found locally in suitable habitats include the Indiana bat (endangered) and the eastern prairie fringed orchid (threatened), although neither of these species have been documented on the Refuge. None of the alternatives propose activities that would adversely impact potential roosting and foraging habitats of the Indiana bat. None of the alternatives reduce the potential for the eastern prairie fringed orchid.

#### **Alternative A – Current Management (No Action)**

Under this alternative, a minor percentage of the public which prefers that the Refuge maintains or reduces public access would be most satisfied. However, the majority of the public would continue to feel excluded from the Refuge, especially persons with mobility impairments.

Law enforcement and resource protection demands would not change since there would be no increase in the level of public access.

Maintenance demands would not change because there would be no new or enhanced infrastructure or facilities.

Wildlife disturbance would not change since there would be no increase in the level of public access.

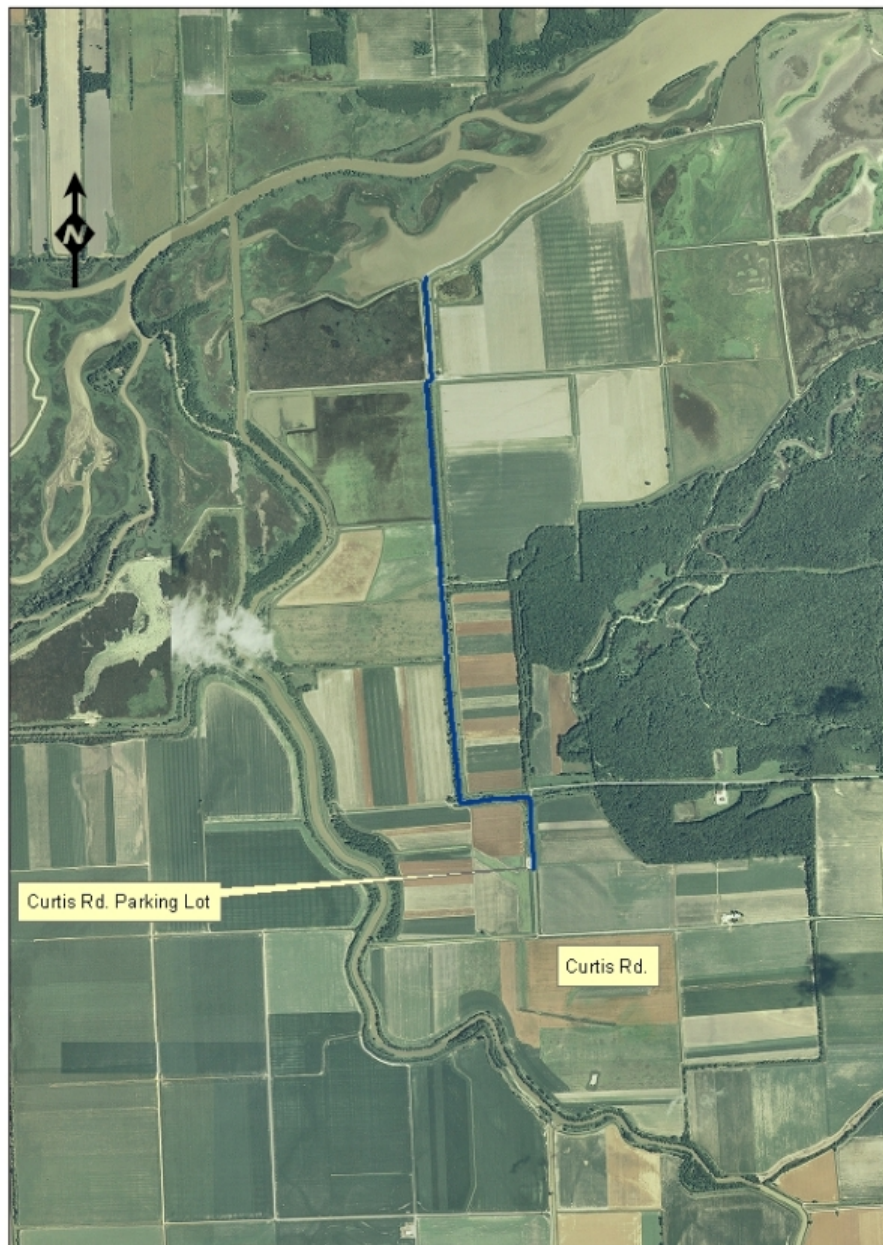
#### **Alternative B, Establish 2.5-mile Route**

Wildlife observation opportunities would be moderately improved. Public appreciation for the Refuge would increase because of increased access for wildlife observation and improved environmental education and interpretive programs. However, the public would still be denied access to the majority of the best wildlife viewing areas. The minority that prefers reduced access would be less satisfied.

Law enforcement, resource protection, and maintenance demands would increase moderately as visitor numbers would increase. Wildlife disturbance would also increase moderately.



### Auto tour - Short 2.5 mi. Loop



### Alternative C, Establish 7.5-mile Route (Preferred)

Wildlife observation opportunities would be substantially improved as the public is permitted to get the most comprehensive experience of what makes the Refuge a special place. Public appreciation and perception of the Refuge and its resources would be maximized. The minority that prefers reduced access would be least satisfied.

Law enforcement and resource protection demands would increase the most under this alternative because it would yield the greatest increase in visitor numbers and access.

Maintenance demands would increase the most under this alternative because it would yield the most new and expanded infrastructure and facilities.

Wildlife disturbance would increase the most under this alternative because it would yield the greatest increase in visitor numbers and access. However, practices will be implemented to make the increase in wildlife disturbance over Alternative B insignificant. These practices include seasonal closures and requiring visitors to stay in vehicles except for designated locations.

## Auto tour - Long 7.5 mi. Loop



## **Chapter 5**

The individuals who were primarily responsible for writing and editing the EA include:

Steven F. Kahl, *Refuge Manager, Shiawassee National Wildlife Refuge* (current). Mr. Kahl provided overall direction, supervision, and coordination with agencies and the public and completed the writing and editing.

## **Chapter 6: Consultation and Coordination**

During initial planning of the CCP, which includes an auto tour route in its proposed alternative, the Service coordinated a series of open houses and focus groups in Bridgeport Township, Thomas Township, and at the Green Point Environmental Learning Center. The topic of one of the focus groups was wildlife observation. Refuge staff also consulted directly with neighbors, organizations, state and local government units, interested citizens, and local agency representatives.

## **Chapter 7: Literature Cited**

U.S. Fish and Wildlife Service. 2001. Comprehensive Conservation Plan and Environmental Assessment for Shiawassee National Wildlife Refuge.